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**APPLICATION FOR
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IN THE NAMES OF**

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FOR

BASE AND POST STABILIZATION SYSTEM

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BASE AND POST STABILIZATION SYSTEM

FIELD OF INVENTION

The present invention is directed generally to a crowd control stanchion and more specifically, to a crowd control stanchion having a selectively movable insert for securing a post to a base.

BACKGROUND

Stanchions comprised of a base and post system are common. Most stanchions are used as public guidance systems or crowd control measures. Crowd control stanchions, as this genre will be referred to, are generally manufactured and assembled at the factory. While this method lessens the chance of faulty assembly of the stanchion, it dramatically increases the cost of shipping and storage of the stanchions. Due to the stanchion's unusual shape, only a few stanchions will fit in a box and much of the box's space is wasted. Some manufacturers have started manufacturing and shipping the elements of the stanchion separately. That is, the base, the post, and any retractable belt or other accessory are manufactured and shipped separately and the stanchion requires assembly before use. Separate shipping decreases shipping and storage costs by reducing the size and number of boxes required, because all posts may be placed in one box and shipped together, all bases in another box, etc. However, the assembly requirement increases the chance of faulty assembly of the stanchion, which further increases the chance of accidents occurring during the utilization of the crowd control stanchion.

Crowd control stanchions are generally designed to be heavy and difficult to move, so as to discourage the unauthorized removal or movement of the stanchions. This is generally accomplished by utilizing a base made of a heavy metal such as steel or iron. The base usually has a small protrusion which the larger hollow post is place over. The post can then be secured to the protrusion, and thus the base, by affixing a screw through the post into the protrusion. The whole of the stanchion is thus heavy to move. However, there are several problem with this design. In the assembly process, often times the post is not secured properly, thus making it easy

for an unauthorized user to pull the post off the base. Because the post is frequently manufactured from a lighter material in order to reduce costs, incidents have occurred where children have pulled the post from the base and then playfully swung the post around until someone has been injured. Additionally, the post is generally affixed to the protrusion of the base with a small screw, one that will often bend if the base is battered around too much. Obviously, if the screw bends too far, it will break causing numerous problems. Additionally, bending the screw will cause the post to become angled, leaving a less desirable looking stanchion. One solution to this problem is to machine the post and the base to which it couples to exacting accuracy. However, this solution is quite costly.

What is needed is a cost-effective, easy-to-assemble solution that will increase the stability of the post while still allowing the individual elements of the stanchion to be shipped separately.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 shows an exploded view of a crowd control stanchion according to an embodiment of the present invention;

FIGURE 2A shows a side view of an assembled crowd control stanchion;

FIGURE 2B shows a cross-sectional view of the stanchion of Fig. 2A taken along line B-B.

FIGURE 3A shows an embodiment of the insert in its engaged state.

FIGURE 3B shows a cross-sectional view of an embodiment of the insert in its engaged state.

FIGURE 4A shows a cross-sectional view of a different embodiment of the insert.

FIGURE 4B shows a cross-sectional view of a different embodiment of the insert in its engaged state.

DETAILED DESCRIPTION

Embodiments of the present invention are directed to crowd control stanchions incorporating an insert to secure a post to a base. The insert is secured to the base and disposed within the post. The insert is composed of two portions that can be selectively moved relative to each other, by use of a bolt. When the portions are manipulated, the portions apply radial pressure to the inside wall of the post along significant surface area. Such radial pressure increases the static friction between the insert and the post, thus reducing the probability that the post will move either vertically or rotationally relative to the insert and thus to the base. The reduction in movement lessens the probability that the post will become detached from the base by an unauthorized user or that the post will become bent.

The crowd control stanchion of the present invention is easily assembled and secured, thus reducing the chances of faulty assembly. Moreover, the use of an insert provides a cost-effective solution to maintain the integrity of the post and base system while, at the same time, allowing the base and post to be easily disassembled for easier and cost-effective shipping and storage alternatives.

FIGURE 1 depicts a crowd control stanchion according to an embodiment of the present invention. The crowd control stanchion, according to one embodiment, includes a base 10, a decorative cover 20, an insert 30 having an upper portion 210 and a lower portion 220, a bolt 230 (see Figure 2) and a post 40. According to an embodiment of the present invention, the base 10 is constructed from a heavy element, for example, steel or iron may be used. According to an embodiment, the base 10 has an arcuate shape, and a first axial opening 50, extending completely therethrough, that may be threaded to accept a threaded section 270 of the lower portion 220 of the insert 30. Thus, the insert 30 may be secured to the base 10 by threading the threaded section 270 of the lower portion 220 of the insert 30 into the threaded first axial opening 50 in the base 10. The non-threaded section 290 of the lower portion 220 of the insert 30 extends out of the first axial opening 50. The post 40 is then placed over the insert 30 and placed in

communication with the base 10, such that the upper portion 210 and the non-threaded section 290 of the lower portion 220 of the insert 30 are completely disposed within the post 10.

FIGURE 2A shows a side view of an assembled crowd control stanchion and FIGURE 2B shows a cross-sectional view of the stanchion of Fig. 2A taken along line B-B. Once the post 40 has been placed over the insert 30 and is in communication with the base 10, the stanchion is ready for final assembly. A bolt 230 is used to engage the two portions 220, 210 of the insert 30 which secures the post to the insert 30 and base 10. The bolt 230 passes vertically through an offset axial opening 250 in the underside of the threaded section 270 of the lower portion 220 of the insert 30 and is threaded into a second offset axial opening 280 in the underside of the upper portion 210. The upper portion 210 and the lower portion 220 are loosely joined by passing the bolt 230 through the lower portion 220 and partially threading it into the upper portion 210. This ensures that one does not have to line up the offset axial opening 250 in the lower portion 220 with the second offset axial opening 280 in the upper portion 210 after the post 40 has already been placed over the insert 30. In an embodiment of the invention, the base further includes a set-screw hole and a set-screw such that, after the insert 30 has been threaded into the base 10, the set-screw is engaged, putting pressure upon the insert 30 so that the insert cannot be unthreaded from the base 10 unless the set-screw is disengaged.

In an embodiment of the present invention, the two portions 220, 210 of the insert 30 resemble two halves of a cylinder cut into wedges so that they have inclined surfaces, and there will be both a short side and a long side to both wedges (the short side of the upper portion 210 is opposite to the short side of the lower portion 220, see FIGURE 3B). Because the offset axial openings 280, 250 do not pass exactly through the midpoints of their respective portions 210, 220, when the bolt 230 is tightened, it causes the upper portion 210 of the insert 30 to become offset relative to the lower portion 220 of the insert 30. In one embodiment of the present invention, the offset axial openings are situated thusly: the offset axial opening 250 in the lower portion 220 of the insert 30 is situated so that the opening 250 is closer to the shortest sidewall of the lower portion wedge 220; the other offset axial opening 280 is located closer to shortest

sidewall of the upper portion 210. Thus, when the bolt is tightened, the shorter sidewalls of both portions 220, 210, will be moved closer together, causing the portions 220, 210 to slip against each other and become offset. The edge of the long sidewall of one portion 210, 220, dangles over the edge of the short sidewall of the other portion 210, 220, as can be see in Figure 3A, B.

When the bolt 230 is tightened after the post 40 has been placed over the insert 30, both portions 210, 220 press against opposite inside walls 240 of the post 40, applying radial pressure thereto along the entire length of the long sidewalls if the two portions 210, 220 of the insert 30. In this embodiment of the invention, the pressure applied is not truly radial as the pressure is exerted upon less than 360 degrees of the inside wall of the post (the pressure is applied to approximately 90 degrees of the inside wall 240 for each portion 210, 220 of the insert 30). However, for lack of a better name, such pressure will be referred to as "radial." The increase in radial pressure causes a corresponding increase in static friction between the insert 30 and the post 40 and reduces the ability of the post 40 to move vertically or rotationally relative to the base 10.

In another embodiment of the present invention, the two halves of the insert 30 are not cut at an angle forming a upper portion and a lower portion. Instead, the cylinder has two portions 410, 420 that are formed by a vertical cleave along a portion of the longitudinal axis of the insert (See Figure 4). However, the manner and function of the insert 30 is the same as the previously mentioned embodiment. As the bolt 230 is tightened, the bolt 230 causes expansion of the two portions 410, 420, causing both portions 410, 420 to move away from the center of the insert, increasing the radius of the insert. Thus, when the post 40 has been placed over the insert 30 and the bolt 230 is tightened, the portions 410, 420 apply true radial pressure against the inside wall 240 of the post 40.

In another embodiment of the present invention, the axial opening 50 in the base 10, does not extend completely therethrough. Instead, the axial opening 50 extends from the top of the base to the bottom, stopping a few centimeters before the bottom surface of the base. Another bolt placement opening 295 extends from the bottom surface of the base 10 through to the axial

opening 50. In this additional embodiment, the bolt 230 is placed through the bolt hole 295 before being inserted into the offset axial opening 250 in the bottom portion 220 of the insert 30. It is then threaded into the upper portion 210 of the insert 30 as previously described. The added benefit to this embodiment is that it more thoroughly connects the insert 30 and the base 10, and thus, after assembly more thoroughly secures the post 40 to the base 10.

In a another embodiment of the present invention, the post 40 further includes a means for dispensing a retractable belt for linking a plurality of stanchions together, however, other embodiments may include an eyelet from which ropes may be attached with either a hook or snap connector and said ropes may link a plurality of stanchions together. Still further embodiments may include a molding to which rigid railing may be secured, said rigid railing connecting a plurality of stanchions. In addition, although the post 40 may be generally cylindrical and elongated with a circular cross-section, in alternative embodiments, the post 40 may be square or any other suitable shape.

In an embodiment of the present invention, the base 10 has a generally arcuate shape. However, in alternative embodiments, the base 10 may be square, flat, sloped or any other suitable shape. In addition, the post 10 may be made from any suitable material, such as, e.g., plastic. Similarly, while in an embodiment of the present invention, the entirety of the interior of the post is hollow, in other embodiments, only a portion, e.g., the lower portion, of the post may be hollow.

In an embodiment of the present invention, the insert 30 may be cylindrical with a circular cross-section, however, in other embodiments, the insert 30 may be square or any other suitable shape that allows one of the portions 210, 220 of the insert 30 to move relative to another one of the portions 210,220 and thereby place pressure on the inside wall 240 of the post 40.

In an embodiment of the present invention, the insert 30 may be threaded into the base 10, however in other embodiments, the insert 30 may be welded to the base 10 or in some other form, permanently attached to the base 10.

While the description above refers to a particular embodiment of the present invention, it will be understood that many modifications may be made without departing from the spirit thereof. The accompanying claims are intended to cover such modifications as would fall within the true scope and spirit of the present invention. The presently disclosed embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims, rather than the forgoing description, and all changes that come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.